

What is claimed is:

1. An alignment fixture for aligning a component of a drum assembly used in a video recording device, said alignment fixture allowing said drum assembly to be aligned outside of said video recording device, said alignment fixture comprising:
 - a base configured to receive and support said drum assembly;
 - a reference system configured to place a portion of said drum assembly in a known position relative to said base; and
 - a positioning system for adjusting the position of said component of said drum assembly relative to said base when said portion of said drum assembly is positioned in said known position.
2. The fixture as recited in claim 1 wherein said base includes an opening for receiving a portion of said drum assembly therethrough, and a mounting surface for supporting a portion of said drum assembly thereon.
3. The fixture as recited in claim 1 wherein said reference system includes one or more reference pins for guiding said drum assembly into said known position, said reference pins engaging the outer peripheral surface of said drum assembly so as to prevent the drum assembly from moving laterally.
4. The fixture as recited in claim 1 wherein the component is a drum, and wherein said positioning system includes a positioning mechanism for adjusting the position of said drum, said positioning mechanism including an adjustment post structurally coupled to said base and an adjustment screw threadably coupled to said adjustment post, the adjustment screw being configured to engage and exert a force on said drum so as to adjust its position.
5. The fixture as recited in claim 1 wherein the component is a structural support, and wherein said positioning system includes a positioning mechanism for adjusting the position of said structural support, said positioning mechanism including an adjustment screw threadably coupled to said base, said adjustment

screw being configured to engage and exert a force on said structural support so as to adjust its position.

6. The fixture as recited in claim 1 wherein said positioning system includes a measurement arrangement for checking the alignment of said component of said drum assembly, said measurement arrangement including a measurement post for receiving a measurement device for measuring the eccentricity of said component, said measurement post being structurally coupled to said base.

7. A method of aligning a drum assembly used in a video recording device, said method comprising:

checking the alignment of a first component of said drum assembly relative to an axis of said drum assembly;

making a determination as to whether the alignment is within a desired limit; and

adjusting the position of said first component relative to said axis when the alignment is not within said desired limit, said adjusting placing said alignment within said desired limits.

8. The method as recited in claim 7 wherein said drum assembly includes an upper drum that is connected to a lower drum via a drum support.

9. The method as recited in claim 8 wherein said component corresponds to said upper drum.

10. The method as recited in claim 8 wherein said component corresponds to said drum support.

11. The method as recited in claim 8 wherein said drum assembly further includes an inner drum coupled to a spindle assembly, the spindle assembly rotating about said axis, the inner drum being disposed between said upper and lower drums.

12. The method as recited in claim 8 wherein said component corresponds to said inner drum.

13. The method as recited in claim 7 wherein checking the alignment comprises:
providing an indicator tool;
positioning the indicator tool on the drum assembly relative to the axis; and
measuring the displacement of said component relative to said axis with said indicator tool.

14. The method as recited in claim 13 wherein said indicator tool is positioned on a rotatable component of said drum assembly such that said indicator tool rotates about said axis.

15. The method as recited in claim 14 wherein said displacement of said component relative to said axis is measured by rotating said indicator tool about said axis and along a surface of said component.

16. The method as recited in claim 7 wherein adjusting the position of said component comprises applying a force on said component so as to move said component, said moving placing said alignment with said desired limits.

17. The method as recited in claim 16 wherein said force is applied by a mechanical means.

18. An alignment tool for aligning a support structure of a drum assembly, said drum assembly being used in a video recording device, said alignment tool comprising:

an alignment plate adapted to be secured to a component of said drum assembly, said alignment plate including a reference surface for providing a reference position relative to the position of said component of said drum assembly when said alignment plate is secured to said component of said drum assembly; and

a positioning mechanism coupled to said alignment plate and adapted to adjust the position of said support structure so that said support structure abuts said reference surface of said alignment plate, wherein said support structure is placed

in said reference position relative to the position of said component when said support structure abuts said reference surface.

19. The tool as recited in claim 18 wherein the component is a spindle assembly, and wherein the support structure is a drum support that connects an upper drum to a lower drum of said drum assembly, said drum support having an inner peripheral surface that engages an outer peripheral surface of said upper drum.

20. The tool as recited in claim 19 wherein diameter of said alignment plate coincides with the diameter of said upper drum.

21. The tool as recited in claim 19 wherein the positioning mechanism includes a biasing screw for adjusting the position of said drum support, said biasing screw being configured to engage the outer peripheral surface of the said drum support, and to apply a force thereto so as to abut the inner peripheral surface of said drum support to the reference surface of said alignment plate.

22. The tool as recited in claim 18 wherein said alignment plate includes an upper plate for providing the reference surface and a lower plate for engaging said component of said drum assembly.

23. The tool as recited in claim 18 wherein said positioning mechanism includes an alignment bracket that is detachably coupled to said alignment plate, and a biasing screw that is threadably coupled to said alignment bracket, said alignment bracket placing said biasing screw away from said reference surface of said alignment so as to produce a gap therebetween, said biasing screw being configured to engage said structural support when said structural support is disposed within said gap, and to apply a force thereto so as to abut said structural support against the reference surface of said alignment plate.